

MATVEYEVA, Ye. A.

Additional data on the effect of refractories on the appearance of seeds and blisters in molten glass. N. M. Yablonskiy and E. A. Matveyeva. *Nauka i Tekhn. Inform. Byull. Vostochno-Sibirsk. Nauch. Ts. SSSR*, 1954, No. 5, 23-28; *Angl. transl.*, *Isis*, 1954, No. 48300. — Expts. in the study of causes of the formation of seeds and blisters in the fused mass of a glass melting tank in the Micherson plant are described. The defects were confined primarily to the mullite lining of the cooling section of the furnace. Pieces of the studied refractory were placed at the bottom of fireclay crucibles and covered with small-size cullet. The crucibles were then heated to 1450° and thus kept for 8 hrs., then rapidly cooled to 1000-1100° and thus kept for 8 hrs. After cooling, the crucibles were broken in half and in each were counted the seeds and the blisters. Zircon-mullite brick of dark-gray color gave off most of the seeds and blisters into the glass. Light-gray zircon-mullite gave off less. Improved white zircon-mullite produced from a mix free of C caused none of the difficulties. Thermite-mullite and indium refractories produced none or very little of the defects. Reduction products, such as ferro-silicon, carbides, and C, contained in a refractory are the main cause of seeds and blisters in the glass mass.

M. Hosh

S/193/60/000/009/003/013  
A004/A001

AUTHORS: Degtyarenko, A.G., Matveyeva, Ye.A.

TITLE: The ACY -1 (ASU-1) Installation for Automatic Welding in Carbon Dioxide Medium

PERIODICAL: Byulleten' tekhniko-ekonomicheskoi informatsii, 1960, No. 9, pp. 11-13

TEXT: The Altayskiy nauchno-issledovatel'skiy i proyektno-tehnologicheskii institut mashinostroyeniya (Altay Scientific Research and Technological Planning Institute of Mechanical Engineering) has designed and introduced the ASU-1 apparatus for the automatic welding in carbon dioxide medium of ring-shaped seams with a diameter of up to 200 mm. This installation is composed of the following units: bed, mechanism for the rotation of components, electrode wire feed mechanism, welding torch, electric equipment, gas feed system and welding d-c source. The welding head has been designed and manufactured on the basis of the 3M-6 (EM-6) electric metal spray gun. The POK-1 (ROK-1) pre-reductor drier is used for the elimination of moisture, while dehydrated copper sulfate (according to GOST (GOST) 2142-43), roasted for 4 hours at 300°C, is employed as drying

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S/193/60/000/009/003/013  
A004/A001


The ACU-1 (ASU-1) Installation for Automatic Welding in Carbon Dioxide Medium

agent. The drying agent is over-charged after 5-6 cylinders of carbon dioxide have been used. In order to prevent the freezing of the installation reductor, an electric preheater of carbon dioxide, a design of the Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (Electric Welding Institute im. Ye.O. Paton of the AS UkrSSR) is used. The ДЗР-1-59 (DZR-1-59) reductor maintains a constant consumption of carbon dioxide. The authors give a description of the electric characteristics of the generator and point out the following advantages of the described installation in comparison to installations of manual arc welding: possibility of automating the process of welding annular seams of smaller diameters on which flux is retained with difficulties, the use of cheap carbon dioxide, the high melting rate of the electrode wire, the absence of a silicon-reduction process and, consequently, no necessity of limiting the upper boundary of silicon content in the basic metal, the elimination of inconveniences connected with the necessity of using flux and preparing coatings. The following technical data are given: speed of component revolution = 0.8 - 5 rpm, make of electromotor = ДТ-75 (DT-75), 2,800 rpm, voltage = 220 v, power = 75 w, stepless friction reductor of the Svetozarov system, rate of electrode wire feed = 0.47 - 3 m/min, diameter of wire used = 2 mm, carbon dioxide consumption = 700-

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S/193/60/000/009/003/013  
A004/A001

The ACY -1 (ASU-1) Installation for Automatic Welding in Carbon Dioxide Medium  
900 liter/hour. Compared to the welding of tractor parts by the manual arc  
process, the new automatic welding process in a carbon dioxide medium possesses  
a 3 - 3.5 times higher efficiency. There is one figure.



Card 3/3

2  
ACCESSION NR: AP4009835

S/0191/64/000/001/0052/0054

AUTHOR: Nikolayev, A. N.; Yartsev, V. G.; Kulikov, N. V.; Vitenberg, A. R.; Matveyeva, Ye. A.; Ter-Mkrtchan, G. S.; Naumova, V. V.

TITLE: Glass plastics for constructional purposes

SOURCE: Plasticheskiye massy\*, no. 1, 1964, 52-54

TOPIC TAGS: plastics, glass plastics, binders, polyester, resin PH-1, epoxy resins, styrene, glass lubricants, glass fillers, plastic tubes, hexamethylenediamine, metaphenylene diamine

ABSTRACT: A very simple and effective technological process for the continuous manufacture of shaped products from glass plastics is described. The products obtained on the stretching apparatus are characterized by high strength and can be applied in various industrial fields. The relationship between the hardeners and the processibility of resin on the continuous apparatus is investigated for a styrene-epoxide compound at a hardening temperature of 140 C. The properties of the styrene-epoxide compound with different hardeners

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ACCESSION NR: AP4009835

are tabulated. The influence of new lubricants, As-1, AF-1, PVE, PVE-3, on the strength of glass plastic was investigated. The relationship between the strength of glass plastic pipes under axial compression and the glass filler content is established. Suggestions for the best choice of binders, lubricants and fillers are given. Glass plastic rods of small diameter made on the continuous machine have a high breaking strength similar to the strength of steel cables. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: CH, MA

NO REF SOV: 000

OTHER: 000

Card 2/2

MATVEYEVA, Yevgeniya Frantsevna; PCHELKIN, Yu.V., red.; PRESNOVA,  
V.A., tekhn. red.

[On the right road] Na vernom puti. Leningrad, Lenizdat,  
1961. 53 p. (MIRA 15:10)

1. Predsedatel' zavodskogo komiteta "Krasnogo treugol'nika",  
Leningrad (for Matveyeva).

(Socialist competition)  
(Leningrad—Boots and shoes, Rubber)

MAYTEL', B.B. [Mithel, B.B.]; SEKSTON, U.R. [Saxton, W.R.]; MORGAN Dzh.Ye.  
[Morgan, J.E.]; YITKAMP, Dzh. [Witkamp, J.]; MATVINYA, Ye.I.  
[translator]: KONIN, A.A., red.

Spinning of high-tenacity rayon from 100 per cent wood pulp. Khim.  
volok. no.5:71-77 '60. (MIRA 13:12)  
(Rayon) (Woodpulp)



SISSON, U.A. [Sisson, W.A.]; MATVEYEVA, Ye.I. [translator]

Effect of the conditions of viscose fiber spinning on its  
structure and properties. Khim. volok. no. 6:63-74 '60.

(MIRA 13:12)

(Rayon)

SPREG, B.SHELDON [Sprague, B.Sheldon]; MATVEYEVA, Ye.I. [translator]

Arnel 60, a new kind of staple fiber based on triacetylcellulose.  
Khim.volok. no.3:70-75 '61. (MIRA 14:6)  
(Rayon) (Cellulose acetates)

TRAYBER, Erikh [Treiber, E.]; MATVEYEVA, Ye.I. [translator]

State of viscose spinning baths. Khim.volok. no.2:65-72 '62.

(MIRA 15:4)

1. Tsentral'naya laboratoriya tsellyuloznoy promyshlennosti  
Shvetsii, Stokgol'm.

(Viscose)

MAKKUN, L.K. [McCune, L.K.]; MATVEYEVA, Ye.I. [translator]

Heat resistant polyamide HT-1 fiber and paper made on its base.  
Khim.volok. no.2:65-68 '63. (MIRA 16:5)

1. Otdeleniye tekstil'nykh volokon kompanii "Dyupon de Nemur",  
SShA.

(United States--Textile Fibers, Synthetic)  
(Polyamides)

PEKAR<sup>1</sup>, P.P., starshiy nauchnyy sotrudnik; SHEVCHENKO, L.A. (Bobrinets)  
GUN, S.I. (Genishesk); RYBINA, N.A. (Novo-Ukrainka);  
PASECHNIKOVA, I.G. (Bereznigovatoye); MATVEYEVA, Ye.M.  
(ARBUZINKA); PODOL'SKIY, L.G. (Starokazatskoye); GRISHAYEVA,  
A.P. (Peschanoye); PYATOVA, A.S. (Varvarovka)

Efficacy of artificial pneumothorax in pulmonary tuberculosis  
patients under rural conditions. Probl. tub. no.8:71-75'62.  
(MIFA 16:9)

1. Iz Odesskogo nauchno-issledovatel'skogo instituta tuberku-  
leza (dir. - starshiy nauchnyy sotrudnik M.A.Yerusnikin).

MATVEYEVA, Ye. N.

Astronomy

Decimal error in the calculation of time moments during observation of meteors.  
Izv. Turk. fil. AN SSSR No. 2, 1949.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

MATVEEVA, Ye.N.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1407  
 AUTHOR SKANAVI, G.I., MATVEEVA, E.N.  
 TITLE New Dielectrics with a Very High Dielectricity Constant and Low Conductivity, which have no Seignette-Electric Properties.  
 PERIODICAL Zhurn. eksp. i teor. fiz., 30, fasc. 6, 1047-1051 (1956)  
 Issued: 8 / 1956 reviewed: 10 / 1956

The present work was intended to realize experimentally such conditions in a solid dielectricum as make it possible that a field favorable to polarization is connected with a relaxation shift of ions with a sufficiently short relaxation time. The main difficulty consisted in realizing a rather considerable shifting of ions in spite of the fact that the structure is conserved and in spite of the fact that perovskite promotes polarization. If bismuth ions (which have the same radius as strontium ions, namely  $1,2 \text{ \AA}$ ) are introduced into the strontium titanate, a partial substitution of bismuth ions for strontium ions without any structural change is possible. Because of the difference in valence the grid is electrically neutral only if also empty nodes occur on the occasion of this substitution, which is very probable. In the case of a not too great content of bismuth-trioxide, strontium titanate dielectrics have a very high and very marked relaxation polarization. Their dielectricity constant remains very high up to extremely high frequencies. The increase of maxima shifts the maxima of  $\epsilon$  and  $\text{tg } \delta$  towards higher temperatures. The marked temperature maxima of  $\epsilon$  and  $\text{tg } \delta$  show that relaxation polarization cannot be overshadowed by other processes as e.g. by an increased conductivity. However, the new dielectrics are not seignette-electric in spite of the temperature maximum of  $\epsilon$  and if fre-

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Zhurn.eksp.i teor.fis, 30, fasc.6, 1047-1051 (1956) CARD 2 / 2 PA - 1407

quency is increased the temperature maxima of and  $\text{tg } \delta$  shift towards higher temperatures. Nonlinearity of polarization is lacking. Moreover, there is no dielectric hysteresis. The condition for the maximum of  $\text{tg } \delta$  and  $\epsilon$  is

$$(\omega\tau)' = ((\epsilon_{\infty} - 1 + (4\pi/\beta_1)) / (\epsilon_0 - 1 - (4\pi/\beta_1))) \sqrt{\epsilon_0/\epsilon_{\infty}} \text{ and } (\omega\tau)'' \sim (\epsilon_{\text{max}} - \epsilon_{\infty}) kT_1 / 2U_{\text{max}} \text{tg } \delta''$$

respectively. Here  $\epsilon_0$  denotes the dielectricity constant at the frequency zero,  $\tau = (2\nu)^{-1} \exp(U/kT)$ ,  $U$  - the potential threshold to be overcome by the relaxing particles,  $\nu$  - the frequency of their oscillations at the place where they are fixed. In the second formula  $\text{tg } \delta''$  refers to the temperature  $T_1$  of the maximum  $T_1$  and to the frequency  $\omega$ , and  $k$  is BOLTZMANN'S constant. In the new dielectrica there are at least 2 series of relaxation times, namely the washed-out series of great relaxation times and a concentrated series of small relaxation times. The electric conductivity of the new dielectrica is very low. At moderate temperatures amperage decreases considerably because of the accumulation of space charges, on which occasion the current may change its direction.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR



Matveyeva, Ye. N.

## INSTRUMENTATION: SCINTILLATORS

"Plastic Scintillators with Fillers of the oxazol Class", by M.N. Medvedev, Ye.N. Matveyeva, and L.Ya. Zhil'tsova, Pribory i Tekhnika Eksperimenta, No 1, January-February 1957, pp 55-57.

The authors report on the results of measuring the amplitudes of pulses from plastic scintillators as a function of the concentration of the fillers, which are substances of the oxazol class. The amplitudes of the pulses from the plastic scintillators with luminescent admixtures have been measured, as was the duration of the glow of specimens when exposed to ultraviolet light. Refers to work by Schorr and Torney (Physical Review, 1950, 80, 474), Koski (Physica Review, 1951, 82, 230), Chou (Physical Review, 1952, 87, 903), Swank and Buck (Physical Review, 1953, 91, 927), Buck and Swank (Nucleonics, 1953, 11, 48), and Swank (Nucleonics, 1954, 12, 14).

Card 1/1

**AUTHORS:** Koz'mina, G. P., Kurlyankina, V. I. 20-114-4- 30/63  
Matveyeva, Ye. N.

**TITLE:** Oxidation Breakdown of Cellulose Ethers (Okislitel'nyy raspad efirov tsellyulozy)

**PERIODICAL:** Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 789-791 (USSR)

**ABSTRACT:** The cellulose ethers, as films, coatings and other products, lose their elasticity and mechanic firmness under the influence of external air and heat. This is connected with the active role played by oxygen. In the present paper some results are given of the study of cellulose ether oxidation through molecular oxygen. The ethers and the cellulose, out of which these former were produced, were heated by the authors to not more than 200°C in an air, oxygen and inert gas current. Tests confirmed that the oxidation through atmospheric oxygen has to be regarded as the cause of the aging and the thermo-oxidizing breakdown of the cellulose ethers. Breakdown develops through the state of formation and subsequent decomposition of peroxides. The alkoxy groups of the simple ethers are separated as the corresponding aldehydes and alcohols. The complex ether-groups which formed one of the ethers, however, are separated in the

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Oxidation Breakdown of Cellulose Ethers

20-114-4-30/63

form of acids, furthermore, as acids and aldehydes containing one- C-atom less than the acid group of the ethers. Finally, according to the separation of ether groups, carboxyl and carbonyl groups accumulate. There are 3 figures, 1 table, and 4 references, 2 of which are Slavic.

**ASSOCIATION:** Institute for High-Molecular Compounds of the AS USSR (Institut vysokomolekulyarnykh soyedineniy Akademii Nauk SSSR)

**PRESENTED:** November 28, 1956 by V. A. Kargin, Member, Academy of Sciences, USSR

**SUBMITTED:** November 28, 1956

Card 2/2

SOV-120-58-3-9/33

AUTHORS: Medvedev, M. N., Matveyeva, Ye. N., Zhil'tsova, L. Ya.

TITLE: Large Volume Plastic Scintillators (Plasticheskiye stsintillyatory bol'shikh ob'yemov)

PERIODICAL: Priory i Tekhnika Eksperimenta, 1958, Nr 3, pp 45-48 (USSR)

ABSTRACT: The preparation of large plastic scintillators using the uncatalyzed high-temperature polymerization of styrene is described. The system used was a modification of that of Ref.4, which was intended for small volumes only; it can give volumes up to 3 litres. For these large volumes particular attention was paid to purifying the styrene. First the water was removed with  $\text{CaCl}_2$ , and the styrene distilled off in vacuo, the temperature and pressure in the distillation flask being 40-50°C and 20-50 mm Hg respectively. The polymerization was slight. This also removes the inhibitor and dust, etc. The doubly-distilled styrene is poured into the polymerization ampoule seen in Fig.1; the ampoule was of Mo glass. Dissolved oxygen is removed by bubbling nitrogen and then evacuating. The ampoule is sealed off and heated on a water-bath till the activator dissolves completely, and then transferred to a preheated glycerol bath at 70-90°C;

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SOV-120-58-3-9/53

# Large Volume Plastic Scintillators

the temperature is then raised to 200°C over 8-10 hours and kept there until 3-4 hours after the styrene has completely ceased to bubble. The temperature is then slowly reduced to 100°C, and the bath then switched off. Total time required 4-5 days. The ampoule fractures and the glycerol is washed from the recovered plastic.  $\alpha$ -NPO, POPOP, TPB and TPP can all be used. The results with these are given in the Table, the compounds being: 1)TPB, 2) and 3) terphenyl +, 4) terphenyl + TPP, 5) terphenyl + quaterphenyl, 6) terphenyl, and 7) anthracene. The next two columns give the dimensions (diameter and thickness), the third and fourth being the pulse height (relative to stilbene) for RdTh  $\gamma$ -rays, for scintillations at the near and far ends, and the last column the light loss in an 80 mm length. Fig.3 shows

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SOV-120-58-3-9/33

•Large Volume Plastic Scintillators

that the light absorption does not fall off nearly as rapidly with length as calculation would indicate. Fig.2 generalises some of the data in the Table. The paper contains 3 figures, 1 table and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Ob'yedinenenny institut yadernykh issledovaniy  
(United Institute for Nuclear Investigations)

SUBMITTED: August 9, 1957.

1. Phosphors--Preparation
2. Styrene--Polymerization
3. Styrene (Polymerized)--Applications

Card 3/3

*Matveyeva, Ye. N.*  
 AUTHORS: Medvedev, M. N., Matveyeva, Ye. N.,  
 Zhil'tsova, L. Ya.,

48-1-10/20

TITLE: Amplitudes of the Impulses of Plastic-Scintillators With Various Activators (Amplitudy impul'sov ot plasticheskikh stin-tillyatorov s razlichnymi aktivatorami)

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1958, Vol. 22, Nr 1, pp. 44-47 (USSR)

ABSTRACT: The purpose of the present work was the production of plastic-scintillators of a large circumference with good transparence for fluorescent radiation, and a maximum ratio  $B_E/\tau$  (yield of energy the duration of scintillation). The impulse-amplitude in a plastic-scintillator is not only dependent on the activator-concentration, but also on the purity of the solvent and that of the activator. The influence exerted by benzoylperoxide upon the impulse-amplitude was investigated here and data for some samples which were produced with catalysts and without catalysts are given. It is shown that the plastic-scintillators which were produced without catalysts bring about an increase in the impulse-amplitudes by  $\sim 10\%$ . The samples of p-terphenyl, produced without catalysts, yield impulse-amplitudes of the order of magni-

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Amplitudes of the Impulses of Plastic-Scintillators With Various Activators-48-1-b/20  
tors.

tude 0,6 of stilbene, but for fluorescent radiation they are not transparent enough. Some substances of the oxazole-class were also investigated. These were used in plastic-scintillators as well as base-fillers as additions to p-terphenyl and 2,5-diphenyloxazole. It is shown that in these substances the maximum amplitudes are attained at an activator-concentration of 0,5 ÷ 1,0 %. The best results were attained in samples with PBD as activator. The sample with 1 % PBD in polystyrene without benzoylperoxide shows impulses whose amplitude amounts to 0,9 with reference to stilbene. The sample with 1% αNPO (i.e. 2-(1-naphthyl)-5-phenyloxazole) in polystyrene without benzoylperoxide yields impulses whose amplitudes amount to 0,73 with reference to stilbene.- PBD is 2-phenyl-5-(4-biphenyl)-1,3,4-oxydiazole. POPOP is 1,4-di[2-(5-phenyloxazolyl)] benzene. It is finally shown that the plastic-scintillators which are produced with p-terphenyl and luminescing additions of POPOP, BBO and αNPO and which possess a comparatively good transparence for characteristic radiation, can be successfully used for scintillation-counters. BBO is 2,5-di-(4-biphenyl)oxazole. There are 4 tables, 4 references, 1 of which is Slavic.

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Amplitudes of the Impulses of Plastic-Scintillators With  
Various Activators.

48-1-10/20

ASSOCIATION: United Institute for Nuclear Research AN USSR (Ob'yedinennyy  
institut yadernykh issledovaniy Akademii nauk SSSR).

AVAILABLE: Library of Congress

1. Crystals 2. Benzoylperoxide-Application

Card 3/3

SOV/79-28-12-7/41

**AUTHORS:** Koz'mina, O.P., Kurlyankina, V.I., Matveyeva, Ye.N., Aleksandrovich, M.K.

**TITLE:** Formation of Peroxides in the Oxidation of Ethers and Esters of Cellulose (Obrazovaniye perekisey pri okislenii efirov tsellyulozy)

**PERIODICAL:** Zhurnal obshchey khimii, 1958, Vol 28, Nr 12, pp 3202-3205 (USSR)

**ABSTRACT:** According to references 1-4 atmospheric oxygen plays an important part in the destruction of cellulose ethers and esters at slightly increased temperatures and under simultaneous ultraviolet irradiation; this fact leads to the oxidation, separation of the oxidized ether-ester groups, and to the decomposition of the chains. These oxidized groups react positively to peroxides so that it had to be assumed that this destruction takes place by way of the intermediate formation of peroxides. The conditions were found here under which the peroxides accumulate in the cellulose ethers and esters, and the velocity curves of their formation with a distinct maximum (Fig 1, Curve 1, in the case of ethyl cellulose) were plotted as compared to the acetaldehyde curve of the same experiment. The curves proved the accumulation and the decomposition of the peroxide groups in the oxidation products in nitrogen atmosphere.

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SOV/79-28-12-7/41

## Formation of Peroxides in the Oxidation of Ethers and Esters of Cellulose

The peroxides of ethers, especially of esters, are easily obtained by ultraviolet irradiation (Fig 2). The peroxides of cellulose ethers and esters are rather stable and can therefore be purified from low-molecular impurities by dialysis. These peroxides, as well as their products of decomposition (volatile peroxides and aldehydes) gradually accumulate on storing and cause a shortening of the induction periods of thermo-oxidative decomposition of the ethers. In the destruction of the peroxide groups with hydrogen iodide or hyposulfite with subsequent removal of the impurities, or on the addition of metal salts of variable valence ( $\text{KMnO}_4$ , iron and copper acetates) with a subsequent removal of these salts induction periods occur again, which are characteristic of freshly prepared samples (Fig 3). The corresponding peroxides can serve as a source of the formation of formic acid, alcohols, and hydrocarbons, i.e. as secondary products of the thermo-oxidative decomposition of the ethers and esters.-There are 4 figures and 7 references, 5 of which are Soviet.

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SOV/79-28-12-7/41

Formation of Peroxides in the Oxidation of Ethers and Esters of Cellulose

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR  
(Institute of High-Molecular Compounds, Academy of Sciences, USSR)

SUBMITTED: January 29, 1958

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24(7)

SOV/48-23-1-23/36

AUTHORS:

Matveyeva, Ye. N., Medvedev, M. N., Shafranov, M. D.

TITLE:

Luminescence Spectra of  $\alpha$ NPO and POPOP in Various Solvents  
(Spektry lyuminesentsii  $\alpha$ NPO i POPOP v razlichnykh rast-  
voritelyakh)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol 23, Nr 1, pp 108 - 111 (USSR)

ABSTRACT:

The present paper gives the results of investigations concerning the yield and the spectra of plastic scintillators with  $\alpha$ NPO and POPOP as basic activators and also as addition to the solutions of paraterphenyl in polystyrene, polyvinyl toluene, and poly-2,5-dimethyl styrene  
( $\alpha$ NPO= 2-(1-naphthyl)-5-phenyl-oxazole  
POPOP= 1,4-di-(5-phenyl-2-oxazolyl-benzene) .Measurements of spectra are carried out with a variation of the concentration of  $\alpha$ NPO and POPOP, and with constant concentration and variation of the solvent. The different spectra with POPOP and  $\alpha$ NPO are shown by a figure. The spectra are not influenced by the solvents. The addition of n-terphenyl increases the luminescence yield in comparison to samples containing  $\alpha$ NPO

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Luminescence Spectra of  $\alpha$ NPO and POPOP in Various Solvents SOV/48-23-1-23/36

and POPOP as basic activators. In accordance with existing conceptions (Refs 1,2) it is assumed that here an excitation energy transfer from the solvent to the luminescent impurity is concerned. The intermediate position of the excitation level of n-terphenyl compared with solvents and the impurity thus increases the possibility of transition of energy from the solvent to the impurity. There are 2 figures, 1 table, and 2 references, 1 of which is Soviet.

Card 2/2

LARIN, N.A.; MATVEYEVA, Ye.E.; SMIRNOVA, V.S.

Synthesis of some 2-hydroxy-4-alkoxybenzophenones. Zhur.  
khim. 30 no.7:2377-2379 J1 '60. (MIRA 13:7)

1. Nauchno-issledovatel'skiy institut polimerizatsionnykh  
plastmass.  
(Benzophenone)

89916

S/191/61/000/002/003/012  
B118/B203

158102

AUTHORS: Matveyeva, Ye. N., Rachinskiy, F. Yu., Kremen', M. Z.,  
Potapenko, T. G.

TITLE: Aging and stabilization of the copolymer of  
ethylene with propylene

PERIODICAL: Plasticheskiye massy, no. 2, 1961, 12 - 16

TEXT: The authors studied samples of copolymers of ethylene with propylene of the type СМ-15 (SEP-15). As compared with low-pressure polyethylene, such a copolymer shows a lower crystallizability, higher elasticity and, compared with high-pressure polyethylene, a higher thermal capacity and stability. There are no publications on aging and stabilization of SEP. Accelerated aging of the copolymer was achieved by rolling at 160°C for 4-6 hr. In this procedure, the authors observed a rapid decrease of the angular tangent of dielectric losses at  $10^6$  cycles/sec, and of the content of fraction insoluble in boiling xylene. They examined the stabilizing effect of azomethines of the aromatic series with various substituents; ✓

Gard 1/3



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B118/B203

Aging and stabilization ....

the azomethines were of the general formula  $\text{x} \begin{array}{c} \diagup \\ \text{R} \end{array} \text{N} = \text{CH} \begin{array}{c} \diagdown \\ \text{R}' \end{array}$ , where

$\text{R} = \text{OH}, \text{NH}_2$ ;  $\text{R}' = \text{OH}, \text{N}(\text{CH}_3)_2$ , and were obtained by condensation of o-, p-aminophenols or o-, p-phenylene diamines with benzoic, p-dimethyl-amino benzoic, and salicylic acid aldehydes. When rolling the sample of SEP-15 for 6 hr, the relative elongation was  $\sim 4\%$ . The tangent  $\delta$  at  $10^6$  cycles/sec grows by the 115-fold, with 63% of fraction insoluble in boiling xylene being formed. The o- and p-oxy-anilines first used as stabilizers were only effective for 2 hr of rolling; phenylene diamines proved to be completely inactive. The azomethines obtained by condensation of unsubstituted aniline with benzoic and p-dimethyl-amino benzoic acid aldehyde, and from o- and m-oxy-aniline and benzoic acid aldehyde, showed no stabilizing effect. SEP kept its physicomachanical properties after 6 hr of rolling only in the presence of benzylal-p-oxy-aniline, and dissolved completely in boiling xylene. Among the phenylene diamine derivatives investigated, only benzylal-p-phenylene diamine stabilizes for 2 hr, and p-dimethyl-amino-benzylal-p-phenylene diamine for about 4 hr of rolling. Among the azomethines,

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Aging and stabilization ...

S/191/61/000/002/003/012  
B118/B203

p-dimethyl-amino-benzylal-o-oxy-aniline and p-dimethyl-amino-benzylal-p-oxy-aniline showed the strongest stabilizing effect. These azomethines, however, give an intense color to samples of SEP-15, and, therefore, can only be used for colored copolymer goods. Azomethines from salicyl-aldehyde and oxy-anilines have an effect similar to that of compounds from p-dimethyl-amino benzaldehyde and oxy-anilines. Salicyl phenylene diamines are poorly efficient, and stabilize the properties of SEP-15 for 2 hr of rolling only. There are 5 figures, 1 table, and 5 Soviet-bloc references.

X

Card 3/3

KIRILLOVA, E.I.; MATVEYEVA, Ye.N.; POTAPENKO, T.G.; RACHINSKIY, F.Ya.  
SLOVACHEVSKAYA, N.M.

Effect of certain organic compounds on the thermal decomposition of  
polyvinyl butyrals. Plast.massy no.5:15-19 '61. (MIRA 14:4)  
(Vinyl compounds)

MATVEYEVA, Ye.N., inzh.

Calculation of ballbearings with a multiple-point contact.  
Nauch. trudy MLTI no.118130-134 '61

(MIRA 1881)

15.8/00

39635

S/191/62/000/008/001/013  
B124/B180

AUTHORS: Kirillova, E. I., Matveyeva, Ye. N., Zavitayeva, L. D.,  
Pratkina, G. P., Obol'yaninova, N. A.

TITLE: Aging of polystyrene plastics. Thermal aging of styrene -  
acrylonitrile copolymers

PERIODICAL: Plasticheskiye massy, no. 6, 1962, 3-10

TEXT: Thermal aging of styrene - acrylonitrile copolymers CH-10 (SN-10) (10.8% acrylonitrile groups), CH-20 (SN-20) (20.15 and 21.4% acrylonitrile groups, molecular weight 113,000 and 119,000), and also CH-28 (SN-28) (29.55, 26.3, and 27.7% acrylonitrile groups, molecular weight 166,000, 120,000, and 132,000) was investigated on films 50-100  $\mu$  thick between 140 and 180°C, and compared with that of polystyrene films. For the copolymers, dichloro ethane was used as solvent and petroleum ether as precipitant, with benzene and ethyl alcohol for the polystyrene. The molecular weights were calculated from the viscosimetric data of L. N. Veselovskaya. The degree of aging was estimated on the basis of the measured intrinsic viscosity, the nitrogen content, and the carbonyl group

Card 1/3

Aging of polystyrene plastics. ...

S/191/62/000/008/001/C13  
B124/B180

formation determined by absorption spectrometry. The rate of formation of oxygen-containing groups falls as the acrylonitrile content in the copolymer rises, and also with its molecular weight (Fig. 8). It is 2-3 times greater in polystyrene than in the SN-28 copolymer. Azomethines with one OH group were effective stabilizers in ortho- and para-position in aniline and one  $\text{NH}_2$  group in para-position only. Azomethine obtained by introducing the group  $(\text{CH}_3)_2\text{N}$  in benzaldehyde proved to be inefficient while the same compound with one CH group in aniline was highly effective. Azomethines based on salicyl aldehyde and hydroxy aniline are also good stabilizers. All azomethines discolor the product and are only recommended for black products. Effective alkyl phenols are phenyl cresylol propane, phenyl isopropyl resorcin, phenyl isopropyl pyrocatechin, 3-methyl-4-phenyl ethyl-6-isopropyl phenol, 3-methyl-4-phenyl isopropyl-6-isopropyl phenol, butyl gallate, bis-[2-tert-butyl-4-methyl phenol]-methane. Extension of the carbon chain between two benzene rings does not greatly affect the stabilizing effect while the latter is increased by introducing a  $\text{CH}_3$  group in the benzene ring in the case of dimethyl phenyl-p-cresol and dicresylol propane. There are 11 figures

Card 2/3

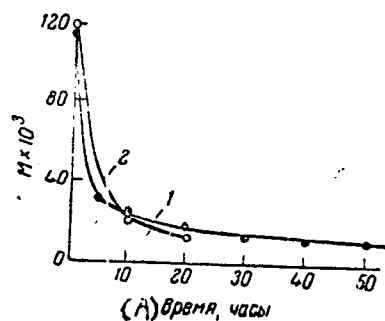
Aging of polystyrene plastics. ...

S/191/62/000/008/001/013  
B124/B180

and 5 tables. The three English-language references are: S. L. Madorsky, S. Straus, Ind. Eng. Chem. 40, 848 (1948); H. H. G. Ellinek, J. Polymer Sci. 3, 850 (1948); 4, No. 1 (1949); M. J. Reiney, M. Tryon, B. G. Achhammer, J. Res. Nat. Bur. Stand. 51, No. 3, 155 (1953).

Fig. 8. Change of molecular weight in thermal aging: (1) SN-20;  
(2) SN-28.

Legend: (A) time, hrs.



Card 3/3

S/191/62/000/011/001/019  
B101/B186

AUTHORS: Kirillova, E. I., Matveyeva, Ye. N., Leytman, K. A.,  
Fratkina, G. P.

TITLE: Aging of polystyrene materials. Photoaging of styrene -  
acrylonitrile copolymer, and its stabilization against  
ultraviolet radiation

PERIODICAL: Plasticheskiye massy, no. 11, 1962, 3-6

TEXT: Films of polystyrene (PS) and of its copolymers CH-10 (SN-10) and  
CH-28 (SN-28) containing 10 and 28% polyacrylonitrile, respectively,  
were irradiated with ultraviolet light from a mercury lamp  
( $\lambda = 2483-5770 \text{ \AA}$ ;  $Q = 0.0152 \text{ cal/cm}^2 \cdot \text{min}$ ) at  $25-30^\circ\text{C}$ . The film thickness  
was  $50-100 \mu$ , the molecular weight  $118,000-194,000$ , the time of irradiation  
about 400 hrs. The amount of the resulting insoluble fraction and  
the intrinsic viscosity  $[\eta]$  of the soluble fraction were determined.  
Results: (1) The amount of insoluble fraction rose with increasing  
acrylonitrile content, and even more so after reprecipitation.  
(2) Molecular weight and  $[\eta]$  dropped rapidly within the first 50 hrs, and

Card 1/3



Aging of polystyrene materials. ...

S/191/62/000/011/001/019  
B101/B186

approached a constant value after 200 hrs. The content of acrylonitrile did not affect the course of these curves. Samples of high molecular weight were destroyed faster than samples of low molecular weight. (3) After 400 hrs irradiation, the content of peroxide compounds was 0.06% in PS and 0.08% in SN-28. (4) The spectra of the irradiated PS films showed a formation of carbonyl groups ( $1700\text{ cm}^{-1}$  band); further, a weak band appeared at  $\sim 3400\text{ cm}^{-1}$  (OH groups), and a broad one at  $1100\text{--}1300\text{ cm}^{-1}$ . In SN-28, a  $1720\text{ cm}^{-1}$  band was observed which may due to aldehydes, ketones, or aromatic ethers. (5) Formation of volatile products was not observed after 60 hrs irradiation at  $60\text{--}70^\circ\text{C}$ . Here, the oxygen content in PS increased from 0.2 to 2%. Addition of 0.5 mole% of benzoyl peroxide increased the degree of destruction to the 6-8fold without any change in the spectra. An attempt was then made to stabilize SN-28 by adding substances having an absorption maximum at  $300\text{--}400\text{ m}\mu$ . Results: (a) 0.5 mole% admixtures of  $\beta$ -naphthyl salicylate, disalicylidene ethylene diamine, its copper salt, 4-propene oxide-2,4-dihydroxy benzophenone, 2,4-dibenzoyl resorcinol, a reaction product of anisole acetone with o-cresol, proved to be weak inhibitors. The effect of 0.5 mole% of 2-hydroxy-4-methoxy benzophenone, as well as that of the

Card 2/3

S/191/62/000/011/001/019  
B101/B166

Aging of polystyrene materials. ...

propoxy and butoxy homologs, was to make  $[\eta]$  decrease not by 62.3% but only by 20-24%. The protective effect increased with increasing concentration of these compounds. The compounds mentioned, doubled the resistance to UV-aging of SN-10 and SN-28, also under atmospheric effects, both in regions of a dry and hot climate with total solar radiation,  $Q = 48 \text{ cal/cm}^2 \cdot \text{min}$ , at  $12.7-25.8^\circ\text{C}$ , and in regions of a moderate, moist climate with  $Q = 37.2 \text{ cal/cm}^2 \cdot \text{min}$ , at  $4.1-16.9^\circ\text{C}$ . There are 7 figures and 2 tables. ✓

Card 3/3

LARIN, N.A.; MATVEYEVA, Ye.N.; KAZHUTKINA, L.V.

Synthesis of certain 2-hydroxy-4-alkoxybenzophenones.

Zhur.ob.khim. 32 no.2:367-369 F '62.

(MIRA 15:2)

(Benzophenone)

45192  
S/191/63/000/001/001/017  
B101/B186

6750  
AUTHORS:

~~Matveyeva, Ye. N.~~, Khin'kis, S. S., Tsvetkova, A. I.,  
Balandina, V. A.

TITLE:

Aging of polyolefins. Thermooxidative degradation of poly-  
olefins

PERIODICAL:

Plasticheskiye massy, no. 1, 1963, 2-7

TEXT: Films 100  $\mu$  thick were produced from high-pressure polyethylene (HPPE), low-pressure polyethylene (LPPE), polypropylene (PP), and ethylene propylene copolymer (EPC), and heated in oxygen atmosphere. In designing the test apparatus with circulating oxygen and collection of the volatile oxidation products at nitrogen temperature advantage was taken of the experience gained by J. R. Shelton, W. Z. Cox (Rubber Chem. and Technol., 26, 632 (1953)) and J. L. Bolland (Proc. Roy. Soc., 186, 218 (1946)). Adsorption of  $O_2$  at 120-170°C was measured, the volatile oxidation products were chromatographically analyzed for  $H_2$ , CO,  $CO_2$ , the liquid ones for acids, esters, peroxides, unsaturated an carbonyl compounds, and

Card 1/3

S/191/63/000/001/001/017  
B101/B186

Aging of polyolefins. ...

water. The content of oxygen-containing groups and unsaturated compounds was determined in the oxidized films. The change of physicochemical properties was studied. Results: (1) Adsorption of  $O_2$  by PP was ~750 mmol/mole after 240 min, whereas the corresponding values were between 100 and 200 mmol/mole for the other polyolefins. As regards stability against oxidation the polyolefins are in the order  $PP \ll EPC < LPPE < HPPE$  and the activation energies for oxygen adsorption are correspondingly 21.8, 30.8, 31.9, and 32.7 kcal/mole. (2) The rate of degradation increases with increasing temperature, e.g., 14.0% volatile products were formed from LPPE after 4 hrs at 150°C, and 24% at 170°C. (3) Oxidation renders polyolefin films brittle and dark-colored, with some loss of their solubility in xylene. The viscosity of the xylene-soluble fraction decreases. (4) Oxidation of HPPE at 150°C for 4 hrs yields about 4% insoluble fraction, 1.9-2.4 mmol/mole formaldehyde, 1.4-1.5 mmol/mole acetaldehyde, the bromine number being 3-3.6. The corresponding data for LPPE are: about 24%, 1.2-1.8, 0.9-1.4, 2-2.6. The different behavior of HPPE as compared with that of LPPE is explained by a higher content of methyl and carbonyl groups in the former. (5)  $\tan \delta$

Card 2/3

Aging of polyolefins. ...

S/191/63/000/001/001/017  
B101/B186

of LPPE rises from 0.0004 to 0.028 at 150°C after 8 hrs (at  $10^3$  cps),  
tan  $\delta$  of HPPE reaches this value after 4 hrs. Conclusion: Polyolefins  
oxidize autocatalytically. There are 9 figures and 4 tables.

Card 3/3

S/191/63/000/004/002/015  
B101/B186

AUTHORS: Matveyeva, Ye. K., Kozodoy, A. A., Gol'denberg, A. L.

TITLE: Agging of polyolefins. The relative light resistance of poly-  
olefins

PERIODICAL: Plasticheskiye massy, no. 4, 1963, 7 - 11

TEXT: This is a report on the ageing of high-density polyethylene (HDPE), low-density polyethylene (LDPE), ethylene-propylene copolymer (EPC), and polypropylene (PP) when irradiated with a mercury vapor lamp at 25 - 28°C or weathered in the climatic regions of Tashkent and Leningrad. The change in relative elongation and tensile strength was studied, as well as  $\tan \delta$  at  $10^6$  cps, and the amount of the fraction insoluble in xylene. Furthermore, the content of CO groups was studied by the IR spectrum, and the change in intrinsic viscosity in decalin at 135°C. Results: Irradiation with UV light rapidly deteriorated all physico-mechanical properties. Brittleness occurred after 50 - 70 hrs in PP, 70 - 100 hrs in LDPE, 100 - 150 hrs in EPC, and 150 - 200 hrs in HDPE. The content of CO groups increased from 0.4 - 0.6 mg/dm<sup>2</sup> in the initial specimen to 7.8 - 9.9 mg/dm<sup>3</sup>.  
Card 1/2

Ageing of polyolefins. The...

S/19/1/63/000/004/002/015  
B101/B186

Simultaneously the intrinsic viscosity decreased. In contrast with other polymers, HDPE formed a fraction insoluble in xylene, which reached a content of 40% after 25 hrs and remained unchanged on further irradiation. As regards stability the polymers form the following sequence; PP < LDPE < EPC < HDPE. Weathering causes the same changes in physico-mechanical properties as UV light, the sequence of stability remaining unchanged. In Tashkent, ageing was 1.2 - 2 times faster than in Leningrad. The content of insoluble fraction in HDPE reached approximately 35% after 60 days but was decreased by longer weathering. The most intensive changes occurred during the months of most intensive sunshine, namely April - October. There are 12 figures and 3 tables.

Card 2/2



L 13370-62

EWP

EPF(o)/EWT(m)/SDS

ASD

Pc-4/Pr-4

RM/WH

ACCESSION NR: AFS003311

4/0191/43/000/007/0044/0051

AUTHORS: Kachinskiy, F. Yu.; Slavashchikova, N. M.; Potapenko, T. G.; Kremen, M. Z.; Matveyeva, N. N.

68

TITLE: Synthesis and investigation of antioxidative properties of some analogues of Ionol (3,5-di-tert-butyl-4-oxitoluene)

SOURCE: Plasticheskiye massy, no. 7, 1963, 48-51

TOPIC TAGS: butyloxitoluene, antioxidant inhibitor, ethylene polymer, propylene polymer, thermooxidation.

ABSTRACT: A number of derivatives of 3,5-di-tert-butyl-4-oxitoluene have been synthesized and tested as possible antioxidant inhibitors. The antioxidant properties of these compounds were evaluated according to their ability to delay the oxidation of bone fat and by their ability to thermostabilize ethylene and propylene co-polymers. It was established that most of the synthesized derivatives, excluding 3,5-di-tert-butyl-4-oxibenzaldehyde and 3,5-di-tert-butyl-4-oxibenzylal-n-phenylenediamine, are effective inhibitors of the thermooxidation destruction processes of bone fat and ethylene and propylene co-polymer. Their activities in most cases exceed the activities of 3,5-di-tert-butyl-4-oxitoluene.

Card 1/1

KIRILLOVA, E.I.; MATVEYEVA, Ye.N.; GLAGOLEVA, Yu.A.; FRATKINA, G.P.;  
USMANOVA, N.F.

Aging of polystyrene plastics. Thermal stability of polystyrene polymers. Plast. massy no.11:3-6 '63. (MIRA 16:12)

MATVEYEVA, Ye.N.; MEDVEDEV, M.N.; RUBINA, O.G.; SHAFRANOV, M.D.

Luminescence spectrum of pentaphenyl. Izv. AN SSSR. Ser. fiz. 27  
no.6:763-764 Je '63. (MIRA 16:7)

1. Laboratoriya vysokikh energiy Ob'yedinennogo instituta yadernykh  
issledovaniy.

(Pentaphenyl—Spectra)

MATVEYEVA, Ye.N.; MEDVEDEV, M.N.; PISAREVA, M.G.; SHAFRANOV, M.D.

Luminescence of p-vinyl biphenyl. Izv. AN SSSR. Ser. fiz. 27  
no.6:765-766 Je '63. (MIRA 16:7)

1. Laboratoriya vysokikh energiy Ob'yedinennogo instituta  
yadernykh issledovaniy.

(Biphenyl--Spectra)

KARGIN, V.A., akademik; NEYMAN, M.B., prof.; BUCHACHENKO, A.L.,  
kand. khim. nauk; MIKHAYLOV, V.V.; MASLOVA, I.P.;  
LUKOVNIKOV, A.F., kand. khim. nauk; MATVEYEVA, Ye.N.;  
BERLIN, A.A., prof.; YANOVSKIY, D.M., kand. khim. nauk;  
POPOVA, Z.V., kand. khim. nauk; LEVANTOVSKAYA, I.I.;  
KOVARSKAYA, B.M., kand. khim. nauk; ANDRIANOV, K.A., prof.;  
KUZ'MINSKIY, A.S., prof.; SLONIMSKIY, G.I., prof.; MAKUNI,  
Ye.B., tekhn. red.

[Aging and stabilization of polymers] Starenie i stabilizatsiya polimerov. Moskva, Izd-vo "Nauka," 1964. 330 p.  
(MIRA 17:3)

1. Akademiya nauk SSSR. Institut khimicheskoy fiziki.
2. Chlen-korrespondent AN SSSR (for Andrianov).

ACCESSION NR: AP4012190

S/0191/64/000/002/0037/0039

AUTHORS: Matveyeva, Ye. N.; Kirpichnikov, P. A.; Kremen', M. Z.;  
Obol'yaninova, N. A.; Lazareva, N. P.; Popova, L. M.

TITLE: Alkylaryl esters of pyrocatechin phosphorous acid - new  
stabilizers of polymers

SOURCE: Plasticheskiye massy\*, no. 2, 1964, 37-39

TOPIC TAGS: pyrocatechin phosphorous acid, stabilizer, polymer, 4-  
( $\alpha$ -phenyl ethyl)-2-hydroxy phenyl dibutyl phosphite, 4-( $\alpha$ -phenyl  
ethyl)-1.2-phenylene phenyl phosphite, heat stabilizer, polyolefin,  
aging

ABSTRACT: Esters 4-( $\alpha$ -phenyl ethyl)-2-hydroxy phenyl dibutyl phos-  
phite and 4-( $\alpha$ -phenyl ethyl)-1.2-phenylene phenyl phosphite were  
difficult to extract in pure form and were studied as stabilizers  
in a technical form. The effectiveness of alkylaryl esters of pyro-  
catechin phosphorous acid as heat stabilizers of polyolefins (poly-  
ethylene of low and high pressure and copolymer of ethylene with  
propylene) was evaluated as to rate of "aging" of unstabilized and

Card 1/2

ACCESSION NR: AP4012190

stabilized polymers. Many aromatic esters of pyrocatechin phosphorous acid are found to be effective thermostabilizers of high and low pressure polyethylene and the copolymer of ethylene with propylene. Physico-mechanical and dielectric properties of the polyolefins were also studied as a function of the heat-aging process. Orig. art. has: 1 Table

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: CH, MA

NR REF SOV: 004

OTHER: 018

Cord

2/2

ACCESSION NR: AP4018158

S/0191/64/000/003/0010/0013

AUTHORS: Kirillova, E.I.; Matveyeva, Ye.N.; Leytman, K.A.; Fratkina, G.P.

TITLE: Relative light stability of polystyrene polymers

SOURCE: Plasticheskiye massy\*, no.3, 1964, 10-13

TOPIC TAGS: polystyrene, light stability, styrene acenaphthylene copolymer, styrene methylstyrene copolymer, styrene vinyl naphthalene copolymer, polymonochlorostyrene, polydichlorostyrene, oxidation intensity, copolymer film oxidation, photodecomposition, photopolymerization

ABSTRACT: The photodecomposition of styrene copolymers with acenaphthylene, alpha-methylstyrene, beta-vinyl naphthalene, polymonochlorostyrene and polydichlorostyrene was investigated. The stability of the following polymers against destruction at 27°C occurred in the following decreasing order: styrene-beta-vinyl naphthalene copolymer, styrene-alpha-methylstyrene copolymer, polystyrene, styrene-acenaphthylene copolymer, polydichlorostyrene, and polymonochlorostyrene, the least stable. Polydichlorostyrene, the styrene-acenaphthylene and the styrene-alpha-methylstyrene copolymers do not polymerize further on

and 1/2



ACCESSION NR: AP4018158

photo-aging. Polymerization does play a basic role in the photo-aging of styrene-beta-vinylnaphthalene copolymer and of polymonochlorostyrene. The intensity of oxidation of these polymers, as determined by the formation of the carbinol absorption band at  $1720\text{ cm}^{-1}$  in the IR spectra, increases rapidly in the first 25 hours with temperature increase from 27 to 620; thereafter the oxidation increases less noticeably, but after 200 hours it is still somewhat higher at the higher temperature. The intensity of the following polymers to oxidation at 620 decreases in the following order: styrene-acenaphthylene copolymer, styrene-beta-vinylnaphthalene copolymer, polymonochlorostyrene, styrene-alpha-methylstyrene copolymer and polydichlorostyrene, the most stable. Styrene copolymer films are oxidized on the surface only to a thickness of about 20 microns. Orig. art. has: 8 figures, 1 table and 2 formulas

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 27Mar64

ENCL: 00

SUB CODE: PH, MA

NR REF SOV: 002

OTHER: 004

Card 2/2

LARIN, N.A.; MATVEYEVA, Ye.N.; PETROVA, T.G.

Synthesis of some 2-hydroxy-5-alkoxybenzophenones. Zhur.  
ob. khim. 34 no. 3:864-866 Mr '64. (MIRA 17:6)

SEMENOVA, A.S.; PARAMONKOV, Ye.Ya.; FEDOTOV, B.G.; GOL'DENBERG,  
A.I.; IL'CHENKO, P.A.; CHAPLINA, A.M.; SKURIKHINA, V.S.;  
SAZHIN, B.I.; MAT'EYEVA, Ye.N.; KOZOLA, A.A.; DYN'KINA,  
G.M.; SIROTA, A.G.; RYBIKOV, Ye.P.; GERBILSKIY, I.S.;  
SHCHUTSKIY, S.V., red.; SHUR, Ye.I., red.

[Medium pressure polyethylene] Polietilen srednego davlenia.  
Moskva, Khimiia, 1965. 89 p. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut polimerizatsionnykh  
plastmass (for all except Shchutskiy, Shur).

ZHIL'TSOVA, I.Ya.; MATVEYEVA, Ye.N.; RUBINA, O.G.; PILIPENKO, T.D.

Production of plastic scintillators of any volume and shape. Prib. 1  
tekh. eksp. 10 no.1:76-78 Ja-F '65. (MIRA 18:7)

1. Ob'yedinennyy institut yadernykh issledovaniy.

1. 01294-66 EPA(s)-2/EWI(m)/EPP(c)/EPP(n)-2/EWP(j) GO/RM

ACCESSION NR: AP5020813

AUTHOR: Matveyeva, Ye. N.; Medvedev, N. N.; Rubina, O. O.; Shafranov, N. D.

TITLE: Scintillation properties of polyphenyls. Report, 13th Conference on Luminescence held in Khar'kov 25 June to 1 July 1964.

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1417-1418

TOPIC TAGS: luminescence, scintillation, solution property, gamma radiation, radiation detector, organic compound

ABSTRACT: The authors have measured the relative intensities of the scintillations initiated by  $^{60}\text{Co}$  gamma rays in solutions of polyphenyls in polystyrene, toluene and phenylcyclohexane. The polyphenyls investigated were: diphenyl, n-terphenyl, n,n'-quaterphenyl, and pentaphenyl. The scintillation intensity increased with concentration at low concentrations, but this effect reached a saturation; the maximum scintillation amplitude of diphenyl and terphenyl was reached at concentrations of 0.05 and 2%, respectively, and increasing the concentration even to 5% did not further increase the intensity. At concentrations up to 0.05% the scintillation intensity increased linearly with the number of phenyl

Card 1/2

L 01291-66

ACCESSION NR: AP5020813

2  
rings in the molecule. The intensity of the scintillations was approximately the same in all three solvents. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Laboratoriya vysokikh energii Ob'yedinennogo instituta yadernykh issledovaniy (High Energy Laboratory, Joint Institute for Nuclear Research) 55

SUBMITTED: 00

ENCL: 00

SUB CODE: OP, M

NO REF SOV: 002

OTHER: 000

27058-66	EWT(m)/ENP(v)/ENP(j)/T/EWA(h)/EWA(l)	IJP(s)	WW/RM
AEC NR: AP6007841	SOURCE CODE: UR/0120/66/000/001/0201/0202		
AUTHOR: <u>Lebedev, I. N.</u>	Furnagova, N. P.; <u>Polina, V. G.</u> ; <u>Moskatovskiy, M. N.</u>		
ORG: <u>Joint Institute of Nuclear Research, Dubna</u>	(Ob'yedinyenyy institut yadernykh issledovaniy)		
TITLE: <u>Optical cement for joining organic glass light pipes to photomultipliers</u>			
SOURCE: <u>Eriory i tekhnika eksperimenta</u> , no. 1, 1966, 201-202			
SUBJ: <u>cement, organic glass, phenyl compound, polystyrene, optic material, optical joining, adhesion, photomultiplier</u>	<u>FEU-29 photomultiplier</u>		
<p>ABSTRACT: The authors investigated a cement based on polystyrene, using phenylcyclohexane (of scintillator purity, VTU-GRU 74-57, Khar'kov Chemical-Reagent Plant), with an aim at finding a substitute for the various hitherto employed high-boiling-point compounds, which have a low yield. The most suitable cement viscosity can be adjusted by varying the polystyrene content (from 20 to 50 wt.% of phenylcyclohexane). Although the cement becomes more viscous in time, it does not solidify and the parts fastened with it can be easily replaced. Other advantages are good adhesion and absence of chemical interaction with the crystals or light pipes, and the fact that phenylcyclohexane is commercially available. The spectral characteristics of the cement were measured by means of a plastic scintillator in optical contact with the photocathode of a photomultiplier (FEU-29) and exposed to 5.27-Mev <math>\alpha</math> particles from <math>\text{Am}^{243}</math>. The pulse-height spectrum obtained with the cement agreed within experimental</p>			
Cat: 1/2	UDC: 666.9: 525.8		

L 27058-66

ACC NR: APC007841

accuracy with that obtained with mineral oil. One of the cement compositions has been in operation for five years without turning yellow or developing bubbles. The spectral test procedure and the preparation of the cement are briefly described. The Orig. art. has: 2 figures and 1 table.

SUB CODE: 11, 09, 20/

SUBJ DATE: 29Jan65/

ORIG REF: 001/

OTH REF: 001



1. 20799-66 EWA(h)/EWI(j)/EWI(m)/T/EWA(1) IJP(c) RM

ACC NR: AP6005953

(A)

SOURCE CODE: UR/0191/66/000/002/0043/0045

AUTHORS: Kirillova, E. I.; Matveyeva, Ye. N.; Zavitayeva, L. D.; Glagoleva, Yu. A.; Leytman, E. A.; Frankina, G. P.

ORG: none

TITLE: A study of the physicochemical properties of impact-resistant polystyrenes during aging

SOURCE: Plasticheskiye massy, no. 2, 1966, 43-45

TOPIC TAGS: polystyrene, light aging, thermal aging, impact strength, elongation, hydroxyl group, polymer/UP-1 polystyrene, UPP-2 polystyrene, PS-SU polystyrene, SNP-2 polystyrene

ABSTRACT: The changes in the physicochemical properties of impact-resistant polystyrenes UP-1, UPP-2, PS-SU<sub>2</sub>, PS-SU<sub>3</sub>, and SNP-2 during thermal, light, and atmospheric aging are studied. Accelerated light aging was done under a PRK-4 lamp. Thermal aging was done in a thermostat at 60°C with sampling every 500, 1000, 2000, and 3000 hrs. Light aging greatly changed the specific impact strength and somewhat changed the specific elongation (see Fig. 1).

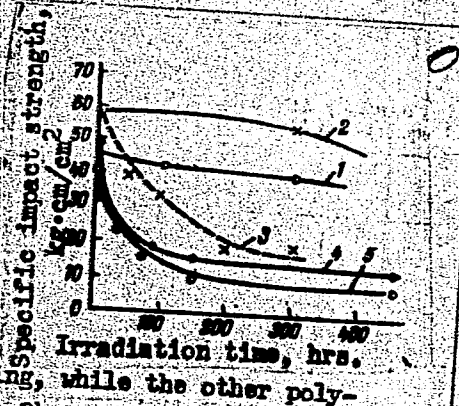
Card 1/3

UDC: 678.746.22-13:678.029.72:0.1:539.3

1 20799-66

AOC ER: AP6005953

Fig. 1. Change in specific impact strength with irradiation: 1 and 2 - SNP; 3 - SNP (irradiation at 60-600); 4 - UPP-2 with  $TiO_2$  filler; 5 - UPP-2 without filler.



The SNP-2 was practically unchanged by thermal aging, while the other polystyrenes were affected more (see Fig. 2).

Fig. 2. Change in specific impact strength with prolonged heat aging at 60°; 1 - UPP-2 without filler; 2 - UP-1; 3 - SNP; 4 - PS-SU<sub>2</sub>; 5 - PS-SU<sub>2</sub>.



Card 2/3

L 20799-66

ACC NR: AP6005953

Ultraviolet rays and increased temperatures affect polystyrenes by reducing the specific impact strength and specific elongation and lead to the formation of carbonyl and hydroxyl groups with a simultaneous decrease in the number of double bonds. The study of aging of impact-resistant polystyrenes is being continued. Orig. art. has: 10 graphs.

SUB CODE: 15 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 006

Card 3/3

L 35342-66	EWI(m)/ENP(j)/T	IJP(c)	WW/RM
ACC NR: AP6009872	(A)	SOURCE CODE: UR/0413/66/000/004/0068/0068	
INVENTOR: <u>Rachinskiy, F. Yu.</u> ; <u>Bruk, Yu. A.</u> ; <u>Matveyeva, Ye. N.</u> ; <u>Polushkina, O. V.</u> ; <u>Kremen', M. Z.</u> ; <u>Lazareva, N. P.</u>			
ORG: None			
TITLE: Stabilization of polyolefins. Class 38, No. 178979 <sup>15</sup> [announced by State Scientific-Research Institute of Polymerization Plastics, Experimental Plant (Gosodastvennyy nauchno-issledovatel'skiy institut Polimerizatsionnykh plastmass eksperimental'nyy zavod); Military-Medical Academy, Order of Lenin, im. S. M. Kirov (Voyenno-meditsinskaya ordena Lenina Akademiya)]			
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 68			
TOPIC TAGS: polyolefin, stabilization, heat resistant polymer			
ABSTRACT: An Author Certificate has been issued describing a method of stabilizing polyolefins. In order to make heat resistant polymers <sup>15</sup> N-substituted parahydroxybenzylamines with a shielded hydroxy group are used as the stabilizer. <sup>15</sup> [LD]			
SUB CODE: 11/ SUBM DATE: 12Aug64			
Cord .1/1 <i>bdh</i>			
UDC: 678.741.679.048.2			

L 24705-66 ENT(m)/EWP(j) JJP(c) RM

ACC NR: AP6009534 (A) SOURCE CODE: UR/0413/66/000/005/0069/0069

INVENTOR: Kirilova, E. I.; Glagoleva, Yu. A.; Larin, N. A.;  
Matveyeva, Ye. N.; Lebedeva, Ye. Ya.; Smirnova, V. S. 27  
 B

ORG: none

TITLE: Method for photostabilization of polystyrene. Class 39,  
 No. 179467 (announced by the State Scientific Research Institute of  
 Polymerized Plastics and Experimental Plant (Gosudarstvennyy nauchno-  
 issledovatel'skiy institut polimerizatsionnykh plastmass i eksperi-  
 mentalnyy zavod))

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5,  
 1966, 69

TOPIC TAGS: polystyrene, light stabilization, photostabilization,  
 light stabilizer.

ABSTRACT: An Author Certificate has been issued describing a method of  
 light stabilization of polystyrene by introducing a light stabilizer  
 into it. To extend the variety of light stabilizers 2-hydroxy-4-v-  
 butoxy-4'-chlorobenzophenone is suggested for use as the light  
 stabilizer. [NT]

SUB CODE: 11/ SUBM DATE: 10Jun64/  
 Card 1/1 F(1) UDC: 678.048.5:746.22 2

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